

# W5YI

America's Oldest Ham Radio Newsletter

## REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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Fred Maia, W5YI, Editor, P. O. Box 565101, Dallas TX 75356  
Electronic mail: fmaia@prodigy.net Website: <http://www.w5yi.org>  
Tel. 817-461-6443 FAX: 817-548-9594

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Vol. 22, Issue #10

\$1.50

PUBLISHED TWICE A MONTH

May 15, 2000

## **Arecibo Observatory – the Worlds Most Sensitive Radar and Radio Telescope!**

*How did the universe begin? How vast is it? How did our Earth and our solar system form?*

The weekend of April 8th I journeyed to San Juan, Puerto Rico to conduct a meeting with our volunteer examiners and VE team leaders. The highlight of the weekend, however, was a behind-the-scenes side trip to the Arecibo Observatory hosted by Bill Genter, KP3O.

Arecibo, home of the world's largest and most powerful telescope for radar and radio astronomy, is located about an hour and a half drive west of San Juan. The Arecibo Observatory can probe objects 10 billion light-years away ...to the very edge of the universe.

The Arecibo Observatory is part of the National Astronomy and Ionosphere Center (NAIC), a national research center operated by Cornell University under a cooperative agreement with the National Science Foundation (NSF). The NSF is an independent federal agency whose aim is to promote scientific and engineering progress in the United States. Additional support is provided by NASA, the National Aeronautics and Space Administration.

The Observatory operates on a continuous basis, 24 hours a day every day, providing observing time, electronics, computer, travel and logistic support to scientists from all over the world. Originally, it was intended to study Earth's ionosphere.

Today it is used for radio and radar astronomy, as well as atmospheric and ionospheric studies. The results of all research are published in various scientific journals which is publicly available.

Radio astronomy deals with observation of radio signals emitted by objects in deep space. About three quarters of the observing time at Arecibo is devoted to radio astronomy – receiving, detecting, amplifying and recording electromagnetic radio signals from distant objects ...such as remote planets, moons and stars. Cosmic radio emissions (as far is known) comes entirely from natural processes

Radar astronomy detects the size and motion of planets, comets and asteroids by transmitting pulses of radio energy and receiving reflections, or echoes, from the objects in its beam.

### **The world's largest radio telescope**

The Arecibo Observatory is the site of the world's largest single-dish radio telescope. Unlike most dishes, this one lays flat on the ground nestled in a natural hollow among mountains. The gigantic dish is fabricated from 300 tons of aluminum and has a surface area of more than eighteen acres ...about the size of 26 football fields!

It consists of nearly 40,000 individual reflecting panels attached to a network of steel cables. There are perforations in the panels to allow vegetation to grow under the dish. The panels focus the incoming radio waves from outer space onto a detecting platform suspended above the dish. The "platform", a 500 ton structure supported by cables from three towers, can be adjusted to enable the telescope to observe the sky from 43° north to 6° south.

THE W5YI REPORT [Pub. No. 009-311] is published twice monthly by The W5YI Group, Inc., 2000 E. Randol Mill Road # 608-A, Arlington, TX 76011  
SUBSCRIPTION RATE: (U.S., Canada and Mexico) One Year (24 issues) \$24.50 • Two Years: \$45.00 • Three Years: \$64.00. • Tel. 817/461-6443  
Foreign Subscriptions via Air Mail: \$39.50 per year. (Payment may be made by Check, Money Order, VISA or MasterCard payable in U.S. funds.)  
Periodicals Postage paid at Arlington, TX. POSTMASTER: Send address changes to THE W5YI REPORT, P.O. Box 565101, Dallas, TX 75356



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Incoming rays, first reflected off the fixed reflector on the bottom of the sinkhole are reflected up and off of two separate mirrors. They finally come to a point focus at the receiver room. You have to see it to believe it!

Use of the Arecibo Observatory is available on an equal, competitive basis to all scientists from throughout the world. Observing time is granted on the basis of the most promising research as ascertained by a panel of independent referees who review the proposals sent to the Observatory by interested scientists. Every year about 200 scientists visit the Observatory facilities to pursue their research project, and numerous students perform observations that lead to their master and doctoral dissertations.

The Observatory had its origin in the fifties when a Cornell University electrical engineering professor by the name of William E. Gordon was interested in studying the properties of the Earth's upper atmosphere. He conceived the idea of using radar back scatter to study the ionosphere. Funding for the project was obtained from the Advanced Research Projects Agency (ARPA).

Gordon believed that a parabolic dish could be built on the ground with a movable receiver hanging above it. Built by the US Air Force, construction of the Arecibo Ionospheric Observatory (AIO) started in the Summer of 1960 and began operation three years later. The huge antenna is steered by moving the feed point which is suspended on a track 450 feet above the stationary dish. It cost more than \$9 million to build.

The location of the observatory was important. To be effective, it had to be near the equator. Puerto Rico was chosen over a site in Hawaii since it offered the advantage of being located in an area with large limestone sinkholes which provided a natural bed in which to construct the 305 meter (1000 foot wide by 167 foot deep) reflector.

Arecibo, located in the rugged terrain of northwestern Puerto Rico, was selected over two other sinkhole sites because it was close to an existing road. The Observatory which spans 118 acres also has thirty-two log-periodic antennas and transmitters with which to conduct ionospheric research. The original Arecibo radar antenna still operates at 430 MHz and its 62 dBi gain delivers some 4 terawatts of ERP to outer space. A terawatt equals one trillion watts (...that's one million megawatts!)

On October 1, 1969 the National Science Foundation took over the facility from the Department of Defense and the Observatory was made a national research center. On September 1971 the AIO became the National Astronomy and Ionosphere Center (NAIC). In 1974 a new high precision surface for the "dish" (the current one) was installed together with a 2380 MHz (S band) high power (500 kW) planetary radar transmitter. Its 10 terawatt signal is used -- among other things -- to plot planet

surfaces. The 1974 upgrade cost another \$9 million.

A second (\$25 million) upgrade to the telescope was completed in 1997 and a new, still more powerful radar transmitter was installed. Its 20 terawatt ERP is the strongest radio signal emitted from Earth. Observations are now possible from 50 MHz to beyond 10 GHz (6 meters to 3 centimeters.).

About 140 persons are employed by the Observatory providing everything from food to software in support of the operation. A scientific staff of about 16 divide their time between scientific research and assistance to visiting scientists. Engineers, computer experts, and technicians design and build new instrumentation and keep it in operation. A large maintenance staff keeps the telescope and associated instrumentation as well as the site in optimal condition. A staff of telescope operators support observing twenty-four hours per day. The telescope also has played a starring role in two popular movie films: "GoldenEye" (1995) and "Contact" (1997).

Many of the technical staff are ham operators including Bill Genter KP3O - Receiver Engineer; Jon Hagen KP4I - Transmitter Engineer; Jose Jimenez KP4FGG - Structural Engineer; Jose Rosa WP4ATM - Senior Receiver Technician, Angel M. Vazquez WP3R - Computer Networks Administrator and Rey Velez KP4REY - Telescope Operations Head. Bill Genter KP3O is also president of their in-house ham club, the Arecibo Amateur Radio Club.

Professor Joseph Taylor, K1JT - winner of the 1993 Nobel prize for physics - completed his research which confirmed Einstein's General Theory of Relativity at the Arecibo Observatory. Taylor credits ham radio with getting him started in physics. His biography says he and his brother "...filled most of the third floor (or his home) with working ham-radio transmitters and receivers. Our rigs were mostly built from a mixture of post-war surplus equipment and junk television sets. ...A fascinating senior honors project in physics allowed me to combine a working knowledge of radio-frequency electronics with an awakening appreciation of scientific inquiry, and to build a working radio telescope. My principal references were an old friend, The Radio Amateur's Handbook, and an early book on radio astronomy..."

There have also been several SETI - the Search for Extra Terrestrial Intelligence - programs conducted at Arecibo but so far, no advanced cultures have been discovered. There are some 300 billion stars in the Milky Way galaxy ...some of which have planets. And it is possible that some of them harbor life. It is thought that the closest advanced technical civilization may be only a few hundred light-years from Earth, which would mean that radio communications are feasible.

The Arecibo Observatory is open to the public Tuesday through Sunday and they have a very interesting Visitor's Center with many interactive exhibits.



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## AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of May 2000:

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0KH	KI0RT	(***)	KC0HWQ
1 (*)	AA1VC	KE1LX	(***)	KB1FCK
2 (*)	AB2HC	KG2RL	(***)	KC2GIN
3 (*)	AA3TR	KF3DY	(***)	KB3EWZ
4 (*)	AF4SB	KV4FB	(***)	KG4HMU
5 (*)	AC5UH	KM5XB	(***)	KD5KBN
6 (*)	AD6LR	KR6EL	(***)	KG6BFV
7 (*)	AC7CG	KK7WI	(***)	KD7IYO
8 (*)	AB8FJ	KI8JX	(***)	KC8OKU
9 (*)	AA9XW	KG9QS	(***)	KB9WGJ
N. Mariana	NH0Q	AH0BC	KH0ON	WH0ABN
Guam	(**)	AH2DN	KH2UV	WH2ANX
Hawaii	WH7Z	AH6QB	KH7ZT	WH6DGJ
Am. Samoa	AH8R	AH8AI	KH8DO	WH8ABF
Alaska	AL0V	AL7RP	KL0XG	WL7CVE
Virgin Isl.	(**)	KP2CP	NP2KS	WP2AIN
Puerto Rico	WP3F	KP3BL	WP3HE	WP4NOT

\* = All 1-by-2 & 2-by-1 call signs have been assigned.

\*\* = All 2-by-1 call signs have been assigned.

\*\*\* = Group "C" (N-by-3) call signs have now run out in all districts. Group "D" calls now being assigned.

**Note:** New prefix numerals now being assigned in Puerto Rico (KP3/NP3/WP3), Hawaii (AH7/KH7/WH7) and Alaska (AL0/KL0)

[Source: FCC Amateur Service Database, Washington, DC]

## NEW AND UPGRADING AMATEUR STATISTICS

For the Month of April 1998, 1999 & 2000

License Class	New Amateurs			Upgrading Amateurs		
	1998	1999	2000	1998	1999	2000
Novice	88	66	65	0	0	0
Technician*	1431	1487	1696	3	0	*373
Tech Plus	173	125	138	361	325	305
General	42	26	6	408	227	200
Advanced	5	5	3	277	231	213
Extra Class	2	4	3	188	132	256
Total:	1741	1713	1911	1237	915	1347
Decrease:	(42.6%)	(1.6%)	(0.0%)	(13.2%)	(26.0%)	+00.0%

**Note:** There are 373 Technician Upgrades shown during April 2000. This may have something to do with the fact that as of April 15<sup>th</sup>, Tech Plus licenses are no longer issued. Instead, a Novice or Technician Class operator who upgrades by passing 5 wpm (or the new Element 2) still remains a Technician Class operator.

As of May 3<sup>rd</sup>, the ARRL/VEC had not yet started to key in any of the more than 10,000 to 15,000 upgrade applications that they have received since the April 15<sup>th</sup> changeover. Bart Jahnke told us that based on the number of amateurs passing written tests between January and April but not upgrading, there was a potential of about 20,000 new upgrading amateurs after 4/15. These will be keyed in during May and will show up in next month's upgrading figures.

## FCC RELEASES "RESTRUCTURING" ERRATA

On April 16, the FCC has released 7 pages of rule corrections to those that appeared in the original appendix to WT Docket No. 98-143. The errors were corrected before the rules were published in the Federal Register. There were no surprises. A summary of the new rules:

**§97.9(b) Operator license** – says that operators who have submitted a Form 605 to a VE team and who hold a CSCE (*Certificate of Successful Completion of Examination*) may immediately begin using their new privileges for up to one year while their application is being processed.

**§97.9(c)(2)** says amateurs must take action to prevent human exposure to excessive RF electromagnetic fields if indicated by a "routine environmental evaluation."

**§97.13(a)** – No new Novice, Technician Plus, Advanced Class or RACES licenses will be granted after April 15<sup>th</sup>.

**§97.21(a)(3)(iii)** – Club and military recreation station licenses will be handled by a Club Station Call Sign Administrator (which are in the process of being assigned.)

**§97.301 Authorized frequency bands** – Novice and Technician Class operators who have previously passed a telegraphy examination are authorized to operate on certain segments of the 80m, 40m, 15m and 10m bands.

**§97.501 Qualifying for a license** – Amateur Extra Class operators must pass Element 1, 2, 3 and 4. General Class - Element 1, 2 and 3 and Technician Class- Element 2.

**§97.503 Element standards** – There was no change to the telegraphy element standards except that 5 wpm (Element 1) is now the fastest code exam speed required.)

The Element 2 (Technician) and 3 (General) written exam element contain 35 questions each (26 passes). Element 4 (Extra Class) contains 50 questions (of which 37 correct passes.)

**§97.505 Element credit** – Unexpired (or within grace period for renewal) General or Advanced Class license - receives Element 1, 2 & 3 exam credit; unexpired Technician Class license granted before 2/14/91 - Element 1 & 2; unexpired Tech license granted on/after 2/14/91 - Element 2; any Novice Class license (expired or unexpired) - Element 1; expired Tech license granted before 3/21/87 - Element 3; a CSCE - elements shown passed within the past 365 days; unexpired commercial radiotelegraphy license - Element 1; any expired or unexpired Technician Class license granted before 2/14/91 - Element 1.

**§97.509(b) Administering VE Requirements** – Amateur Extra, Advanced or General Class VEs may administer Technician Class license examinations. Amateur Extra or Advanced Class VEs may administer General Class license examinations. Only Amateur Extra Class VEs may administer Amateur Extra Class examinations.



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## CUTTING EDGE TECHNOLOGY

■ **How many integrated circuits are out there?** Quite a few, since their invention almost 50 years ago. Microchip Technology recently shipped their one billionth microcontroller. Motorola shipped their one billionth microcontroller several years ago. And these chips aren't nearly as prevalent as generic TTL chips, which exist in the multiples of billions.

■ **Beeper message "I'M OUT OF RAW MATERIAL."** If you own a machine shop and you're on the road or on the other side of the factory, a beeper could relay a message such as this from the computer-controlled machine tool itself. Some of the latest controllers include a cellular paging package which links an RS-232 serial data link to a modem. Supervisors can program such machines to relay hourly progress reports, alarm messages or "Hey, I'm done" messages. Machines can thus work jobs at any hour, day or night, unattended. (Beeper set to vibrate mode get attention better than the usual beep inside loud factories.)

■ **Better re-archive those reel-to-reel tapes.** Professional sound engineers report that some tape brands manufactured in the 1970s have since become prone to "shedding" -- the binder that attaches the metallic particles to the plastic base has weakened, and your valuable music or family history may wind up as brown gunk on the playback heads instead of in your ears. One way to avoid this is to literally bake said tape in an oven. Different engineers have different recommendations on how long to "cook" tapes, because they vary by manufacturer and amount of shedding. Best to duplicate your valuable reel tapes onto something more stable, such as audio cassette or compact disc.

■ **You never know what you'll find when you dig a hole in a big city.** Workers in New York City recently found 175 miles of iron pipe underground in Manhattan and Brooklyn, empty and unused for decades. Originally laid in 1908 for future expansion for the water works, they were pretty much forgotten until recently. Telecommunications companies plan to bring new life to the pipes by outfitting them with fiber-optic cables. This will save lots of time and money, since no one needs to dig a hole or block traffic.

■ **Most optical system engineers don't have to worry about heat damaging the components.** Telescopes and microscopes almost never deal with high temperatures. But lenses and mirrors used in laser systems do. In metal-cutting and welding applications, temperatures that can peel the paint off the walls are very common. No mirror is perfect, and all mirrors absorb some small amount of heat when lasers strike them. Dissipating that heat and keeping its reflective surface from distorting is one of the optical engineer's challenges. The mirror substrate has to act as a heat sink, and most of the heat is concentrated at the center.

■ **Car seats are being made with built-in RF tags.** Embedded within the material is a small tag, read with an RF-based device, that contains a unique serial number that matches the Vehicle Identification Number. It helps the car maker keep track of inventory, and also makes car thieves wary. To resell the seat, a thief would have to remove the RF tag. To remove the tag, he'd have to tear the seat apart. And who wants to buy a torn-up car seat?

■ **Diamonds are a cutter's best friend.** To cut anything, you need material harder than the material being cut. What is the hardest natural substance? Right -- diamond. With the right conditions, you can actually grow a thin layer of diamond onto the cutting surface of a tool to make it sharper and harder, thereby extending the life and usefulness of it. Diamond also dissipates heat exceptionally well, so friction during cutting isn't a problem. (Diamond has less friction than Teflon, too.)

## EMERGING COMMUNICATIONS

■ **How well is High-Definition Television (HDTV) progressing?** It depends on whom you ask. Presently there are over 100 HDTV stations on the air in America, with more on the way. That means half of all viewers in the U.S. can now get an HDTV signal. Whether or not all present-standard TV sets will instantly become obsolete in 2006 remains unclear; some stations think that viewers won't stand for it, others think that viewers will junk their old sets even faster than that.

■ **Running output tubes in parallel boosts output power in amplifiers of all kinds, from ham rigs to TV trans-**

**mitters.** Some of the latest digital TV transmitters not only "bunch" tubes together, they run them far below their maximum rated output power. This is a backup feature. If one of the tubes fails, the others can be driven harder to maintain the original output power with no harm to the remaining tubes.

■ **Still like to gaze at the orange glow of vacuum tubes?** You're not alone; the Tube Collectors Association is a group of hobbyists who exchange information on valves as old as Atwater Kent. \$20 annual dues gets you a bi-monthly newsletter, the *Tube Collector*. Back issues are also available, describing technical specifications for classic tubes such as de Forest's audion, date codes for RCA's, and even histories on cathode-ray tubes. Contact the TCA at P. O. Box 1181, Medford, OR 97501 or log on to their Web site at [www.tubecollectors.org](http://www.tubecollectors.org).

## COMPUTER INFO

■ **Why buy features you don't need?** That's what you do when you buy any software package these days. Even the box for a word-processing program can crowd your desk. Many of the features included won't be used by the vast majority of customers. So why load it all onto the hard drive? It also becomes obsolete, so you'll have to do the whole process all over again. That's why a new business has come into being: software leasing. Customers "rent" software, use what they want and require, and pay a flat fee each month. The owner of the software upgrades it periodically so users won't have to.

■ **A good machinist can tell by ear when a spinning piece of equipment is vibrating too much.** But with tolerances tighter than they have ever been, human ears are no longer good enough. You need another machine to tell you what's going wrong. A sensor records a machine's "known-good" performance signature and compares a suspicious vibration signature against it. Computer software helps track down a worn bearing or other trouble source. Potential equipment failure or fine-tuning of the machine's performance can then be quickly carried out. Metal can therefore be cut at the fastest possible rate.

■ **With U.S. courts drowning in paper, it's nice to know they're trying**



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**to do something about it.** Courts and companies are adapting computer networks and Internet technology to reduce the paperwork that clogs our court system. Cases can often be filed electronically, thereby speeding the process from weeks to days. More case information is being provided on-line, too, helping to speed up searches in court records.

■ **...And back again.** Some PC video card makers are offering digital outputs on their products once again, even though the standard VGA monitor requires analog signals. Why are they doing this? To be compatible with the new flat-panel displays, which require digital inputs for optimum resolution. Rather than waste circuitry in the PC by converting an image's digital data into an analog signal and convert it back in the display, why not send the signal directly? The first PC video formats -- MDA (Monochrome Display Adapter) and CGA (Color Graphics Adapter) were both digital, after all.

## INTERNET NEWS

■ **"I can't remember my password, but I know what it looks like."** This may be a familiar phrase in the near future. A new software program called v-Go Pro lets you turn an ordinary password-entry system on your computer into a graphical-based system. Rather than have to remember a difficult phrase or sequence of unintelligible letters and numbers, you can instead point and click on a series of boxes of the atomic Period Table of Elements, for example. Such a password system is easier to remember and harder for hackers to bypass. It's made by Passlogix.

■ **"Click and Smell" and "Click and Taste" coming to the Web!** Ellwood Ivey Jr. of TriSenx has obtained a patent for a desktop printer-like device that allows surfers to download smells and tastes from the Internet. The scent and taste technology works by mixing several base chemicals that emit the desired smell or simulated taste. A rose will smell like a rose when you click on it.

■ **Wireless Internet coming to the United Kingdom.** The UK's Radiocommunications Agency (Great Britain's "FCC") just announced that they are allocating the 4 GHz frequency band to FWA (Fixed Wireless Access) services. FWA will provide a radio-based alternative to

the "local loop" (we call it POTS, the plain old telephone system.) The idea is to provide consumers with faster Internet access and higher data rates than are available over conventional telephone lines.

■ **"Business as usual" at MP3.com** – The web-based music service says it will continue operating ...even after a U.S. District judge ruled it was infringing the copyrights of the nation's record companies.

Five major record labels argued in a lawsuit filed earlier this year that MP3.com made unauthorized copies of 45,000 compact discs, loaded them onto computer servers and permitted its 400,000 customers to download the music. MP3.com said it would appeal.

MP3.com requires the purchase of CDs. Their system allows computer users who own one of these recordings to listen to the albums over the Internet from any computer. MP3 said their service is the equivalent of customers taping their own CDs and listening to them on another player.

Chairman/CEO Michael Robertson said in response to the decision. "New technologies for delivering music are here to stay, and the technology trend is moving in only one direction: forward."

Despite the recording industry's claims that online music services are damaging their business, music sales figures in the U.S. were up approximately eight percent in the first quarter of 2000 over

## WASHINGTON WHISPERS

■ **The FCC is expected to issue a Notice of Proposed Rulemaking** that would greatly expand the range of frequencies now available for wireless communications and radar systems that could detect the heartbeat of a victim trapped under a pile of earthquake rubble.

Current federal regulations prohibit the "intentional" emission of signals in the ultra wideband (UWB) range by anyone who hasn't purchased the right to operate on a specific frequency. As part of an effort to open UWB and expand the usable spectrum, the FCC issued waivers to three companies for "limited marketing" of devices that emit pulses over a wide band of frequencies, each lasting half a billionth of a second. One of the companies is Time Domain Corp. of Huntsville, Ala., whose founder is credited with in-

venting the technology.

The new devices operate by emitting pulses on a wide band of frequencies, each lasting half a billionth of a second. The pulse has a no effect on any single frequency, thereby eliminating interference to existing users. A feature of the technology is that the signals can penetrate concrete walls, actually revealing the movement of a person on the other side.

Under the waiver granted by the FCC, Time Domain developed Radar-Vision, a device designed to see through solid objects. One of its applications is that it can be used to by rescuers to pull victims out of earthquake rubble and bombed buildings. The device could also allow police to pinpoint the location of a suspect inside a building.

But radar is only one of many possible applications. It may be possible to build a low-cost, low-power wireless network to computers, phones and TV sets without the need for hard wiring. When integrated into cell phones, the location of the user could be readily determined by the user as well as the 911 emergency operator. (Reported by the Los Angeles Times)

■ **"A man's gotta do..."** If you're male and about to turn 18 (or know someone else who is), federal law requires you to register with the Selective Service System. But if you don't feel like going to the Post Office to fill out the form, you can register on line. Click on [www.sss.gov](http://www.sss.gov). If you're older and it's been a while since you've registered, you can check to see your current status, as well.

■ **The U. S. Department of Energy's Lawrence Livermore National Laboratory recently grew its own "diamond" recently.** A chunk of potassium dihydrogen phosphate, about two feet per side and weighing over 700 pounds was recently produced there. The transparent crystal was "grown" over the course of a couple of months and will be used in a huge laser that's being built at Lawrence.

## HAM RADIO ENFORCEMENT

■ **Robert L. Meyers N5WLY and Paul E. Holcombe K4TOF – both of Houston, Texas** have been socked with \$8000 fines by the FCC for "...for willful violations of rules by operating an amateur radio station causing malicious interference to amateur radio communications and transmission of unidentified amateur radio



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communications."

Between 1993 and 1999, the FCC's Houston Office received numerous complaints alleging intentional interference to users on the Memorial Emergency Repeater Association's 145.470/144.870 MHz amateur radio repeater in Houston. The interference was allegedly caused by stations transmitting unidentified tones, inflammatory or derogatory remarks, and unmodulated signals, none of which were identified with an FCC-assigned call sign.

On February 24, 1999, an FCC agent from the Houston Office, using a mobile automatic direction finding (MADF) vehicle to monitor the MERA repeater, monitored unidentified derogatory remarks being transmitted on the input frequency of the MERA repeater.

The agent simultaneously monitored the output frequency of the MERA repeater and observed that this signal would transmit immediately after other stations began transmitting, resulting in interference to communications already in progress on the MERA repeater. The interference was traced to a red Jeep Cherokee bearing Texas license plate C39CYK. This vehicle was registered to Robert L. Meyers, N5WLY.

On June 1, 1999, two agents from the Houston Office visited Mr. Meyers and conducted an inspection of his red Jeep Cherokee. Mr. Meyers admitted that he owned the vehicle but said his radio equipment had been located at his residence, not in his Jeep Cherokee, during the entire year of 1999.

Holcombe was observed on May 25, 1999 by an FCC agent from the Houston Office using a MADF vehicle to monitor the MERA repeater. At about 8:08 p.m., the agent determined that the source of the unidentified interfering transmissions was a silver Toyota bearing Texas license plate DVZ74F. This vehicle was registered to Paul E. Holcombe, licensee of amateur radio station K4TOF.

Immediately thereafter, the Commission agent conducted an interview with Mr. Holcombe and inspected the vehicle. Inside the vehicle, the agent found an amateur radio transceiver which was tuned to the MERA repeater frequency pair and was capable of transmitting on the MERA repeater frequency pair.

Although Mr. Holcombe admitted that he owned the vehicle and the amateur radio transceiver and that he was the licensee of amateur radio station K4TOF, he denied intentionally making any radio

transmissions that day.

Mr. Holcombe stated that his amateur radio station may have been inadvertently activated on May 25, 1999, but he denied any intent to interfere with other stations. Mr. Holcombe also stated that he suffered from a nerve disorder in his hands which makes it difficult for him to manipulate the controls of the amateur radio transceiver in his vehicle.

Both Meyers and Holcombe have been ordered to pay the \$8,000 FCC fines within 30 days.

■ **Angos Winke KC6OKA of Los Angeles and Scott Swanson K6PYP of Pacific Palisades, CA** are embroiled in a repeater coordination dispute. They contend that their KC6OKA/K6PYP repeater system is properly coordinated. This repeater is causing interference to a repeater in Mexico. The FCC said the 145.46 frequency pair in Southern California is coordinated for operations in Mexico.

On March 8, the FCC requested repeater coordination evidence from Angos Winke KC6OKA. Submitted was a purported April 1995 transfer to Winke from Richard LaBelle, W6FXN, of coordination given by the Two-Meter Spectrum Management Association (TASMA), the coordinator for Two-meter spectrum in Southern California, to LaBelle.

TASMA, however, says the repeater is not coordinated and that coordinations are not automatically transferable from one repeater owner to another. Additionally, coordination was specifically denied to Swanson by TASMA some time ago on the basis that the repeater pair sought is coordinated for "...low level and low power output to avoid any problems with radio operations in Mexico".

Until Winke and Swanson are able to show proper frequency coordination for their KC6OKA/K6PYP repeater, they are responsible for taking whatever steps necessary to prevent interference to the Mexican repeater system, the FCC ruled.

"These steps may include lowering antennas, lowering power, changing antenna orientation, shutting down any remotes located near the Mexican border or shutting down the repeater altogether."

The FCC wants Winke and Swanson to show within 20 days, what steps they have taken to prevent interference to coordinated repeater operations on that frequency pair. "If they do not take immediate steps to resolve the interference, they operate at their peril."

The FCC said that they also have been informed that Winke engages in retaliatory jamming and interference to discourage unwanted users on his system.

"We make no finding that such claim is accurate," FCC said "but request that the parties be advised that the Commission does not tolerate jamming or malicious interference on any basis."

■ **John M. Yount K4QIJ of Newton, NC** has been given 20 additional days to respond to a March 29th letter seeking information concerning the operation of his Amateur Radio station. He did send correspondence to the FCC, but not the information requested. Failure to respond could result in license revocation.

■ **Byron R. Eggers KR4GR, Delray Beach, FL** has been sent a second warning notice by the FCC. He was previously warned about causing interference to other Amateurs on the 75-Meter amateur band.

The FCC said it has information "that you have made physical threats against persons you suspect may have filed complaints against you. This is to caution you that such threats made over the air may jeopardize your Amateur license and lead to prosecution...." He was asked to contact the FCC.

■ **Robert A. DiMezza W2GGI, Delray Beach, FL** had been previously warned on January 27, 2000, about his questionable conduct on the N4MOT repeater system of the Motorola Amateur Radio Club. The Warning alleged slander and physical threats made by DiMezza. The FCC now says it has additional information that he has recently engaged in similar conduct on the 75-Meter Amateur band as well. "We repeat our warning that such operation will jeopardize your Amateur license and will not be tolerated." He was asked to contact the FCC within ten days to discuss the matter.

■ **Robert E. Jones of Dover, NC ...and Edward Gunter, Leo C. Mallard, Jr. and Ronald J. Knapp, all of Kinston NC** have been advised that the FCC is conducting an audit of an ARRL VEC examination session conducted on July 30, 1999 in Washington, N.C. Jones, Gunter and Knapp were listed as the VEs. The FCC noted several irregularities regarding the examinations, including excessive erasure marks on answer sheets on several of the answer sheets. The FCC is asking Jones, Gunter, Mallard and Knapp to respond to a series of questions



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concerning their activity at the examination session.

■ **James F. Chambers KF4PWF, Greenville, SC** had been required by the FCC to retake all license examinations leading up to the Extra license on December 7. That examination was to have been completed on or before January 31, 2000. That deadline was extended Chambers' request due to medical problems. The FCC now wants the examinations readministered on or before July 1, 2000. "If the medical conditions you outlined still exist, please submit verification from a physician."

■ **John Babcock, Las Vegas, NV** has been advised by the FCC that it has information that his "Citipage Plus" paging system is causing harmful interference to Amateur Radio Service repeater N7OK, operating on 147.090 MHz. "This is apparently the result of the mixing of your signal at 152.40 MHz at your location, with the 157.740 MHz output of paging system WPAV 492, licensed to Western Regional Paging Network, also in Las Vegas. This apparently results in an interfering signal of 147.10 MHz."

Babcock was asked to contact the service person for N7OK, to determine what steps can be taken to resolve this problem and to report the result of your findings to the FCC by May 30<sup>th</sup>.

■ **Ramon A. Alvarez AE4ES of Miami, FL** has had his Extra Class amateur radio license canceled by the Commission. Alvarez was required on February 14, 2000 to re-take the Advanced Class Amateur Examination under the supervision of a Volunteer Examiner of the American Radio Relay League on or before April 20, 2000. Alvarez failed to appear for the re-examination. "Continued operation of radio transmitting equipment would ...lead to criminal penalties in co-operation with the United States Attorney in your jurisdiction," FCC said.

■ **Phillip A. Robinson N9GOR of Lindenhurst, IL** has been advised that "Commission monitoring of 14.313 MHz on April 26, 2000 indicates that you did not comply with the station identification rules of the Amateur Radio Service."

Sec. 97.119 of the rules requires an Amateur station to identify at least every ten minutes during a communication and at the end of each communication. Robinson was asked to contact the FCC within ten days if he has any questions about this matter.

■ **David O. Castle WA9KJI of Evansville, IN and Arthur Visser W9ART of South Bend, IN** have been sent an affidavit detailing a complaint about their operation on 3.950 MHz on March 18, 2000. They were asked to fully respond to the complaint within 20 days of receipt ...with a copy of their responses also being sent to the complainant's counsel.

Castle and Visser were also advised that the FCC's High Frequency Direction Finding Center in Columbia, Maryland, has been monitoring 75 meters on Saturday evenings for the past several weeks.

"While we have not found that you are directly interfering or jamming other licensees that attempt to meet on 3.950 MHz, your slander and harassment of them violates Section 97.1 and 97.101 of the Commission's rules. It is not only a disingenuous attempt to thwart the group's meeting on 3.950 MHz, but it also degrades the service for legitimate users and endangers the frequency allocations for the Amateur Radio Service." Both, previously warned about this matter, were told "...this is the last warning you will receive before we initiate enforcement action."

■ **Joel I. Pastor of Los Angeles, CA** was advised on December 19, 1999 that the FCC's licensing records indicated that he held at least 17 club call signs, 12 of which were granted on the same date.

Pastor holds: W2000 Mabuhay DX Club, NOYPI WWW Pinoyham Org., KF6TDP Filipino BMW MOA, WA6DU Mabuhay DX, WA6MDX Mabuhay DX Assoc., NOIP Pinoy DX'ers, NU6E Mabuhay DX Contest Club, KF6NIM Magellan ARRN Los Angeles, KC2CIF ULOP DX Group, KD2CIU Magellan ARRN New Jersey, K5CCZ Magellan ARRN Texas, WA6FIL Magellan Amateur Radio Repeater, K6MDX Mabuhay DX Group, KF6IFJ Magellan ARRN Southern CA, KF6IF Magellan ARRN Central CA, KF6IFH Magellan ARRN Northern CA, and KC7UAR Magellan ARRN Southern NV.

Since Pastor did not respond to an FCC letter asking that justification be given as to the need for each of the call signs, all of the club call signs have been canceled.

■ **Dennis J. Flora N6UGY of Red Bluff, CA** has been warned that the FCC has evidence that he has been deliberately and maliciously interfering with the radio operations of other licensed Amateurs on the 75-Meter amateur band. This interference has occurred at various times and

includes broadcasting, keying down, failure to identify and obscenity. "This serves as a Warning Notice that such operation will not be tolerated." He was asked to contact the FCC within ten days to discuss the matter.

■ **Peter M. Figueroa N6IWH of Berkeley, CA and Danny A. Kenwood WA6CNQ of San Francisco, CA** have been warned that the FCC has reports from the control operator of the K7IJ repeater system that in March "...the repeater was shut down due to your interference and harassment to other operators on the repeater system. You were requested to refrain from that conduct and adhere to proper Amateur practice, but refused." Both were asked to call the FCC within ten days to discuss this matter.

The FCC noted that Kenwood's license was modified on October 6, 1999, to prohibit operation above the HF frequencies for a period of 90 days. That action was also taken as a result of his interference to the K7IJ repeater.

■ **Lee R. Bain KE4EJQ of Palm Harbor, FL 34683** was advised that on August 4, 1999, "...you were monitored on 14.302 MHz, transmitting from a vessel in the Gulf of Mexico near St. Petersburg. This is to remind you that the operating privileges of your Technician Class license do not include the 20-Meter Amateur band. Repeated operation outside the Technician frequencies would jeopardize your license and any attempts to upgrade."

■ **Gerald J. Friedel, WB9CIK of Apple Valley, CA** has had his amateur radio license canceled. On April 12, 2000, he was required you to re-take the General Class Amateur Examination at the FCC office at Cerritos, California on or before June 30, 2000. He notified the FCC that he would not be taking the examinations and he had sold or stored all of his Amateur equipment. He said that he may wish to take the Amateur examination after a year has passed.

The FCC agreed that after one year has elapsed, "...you may retake the Amateur examination. Your application would be routinely granted unless there are incidents of unlicensed operation or other Commission rule violations..."

**Craig A. Ickes, AB7KV of Glendale, AZ** also had his Amateur Radio license canceled. He failed to appear for retesting after being required on February 9<sup>th</sup> to retake the Extra Class examinations.



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## HOUSE BILL OPPOSES LOW POWER FM BROADCASTING

*The "Radio Broadcasting Preservation Act of 2000" seeks to require the FCC to revise its regulations authorizing the operation of new, low-power FM radio stations.*

The U.S. House of Representatives has adopted legislation that imposes severe restrictions on a FCC proposal that would have opened the nation's radio airwaves to hundreds of tiny low-power stations. On April 13<sup>th</sup>, the House challenged an FCC move to add up to a thousand low power mini-radio stations in the broadcast FM band.

The House believes that community stations could cause intolerable interference to an already overcrowded band. Chief sponsor of the bill is Rep. Michael Oxley, (R-Ohio.) The bill drastically reduces the number of Low Power FM stations that could be sandwiched in between existing FM outlets by retaining the current interference standards.

The bill mandates that pilot programs in nine markets be conducted to determine what happens when those standards are relaxed to levels sought by the FCC. A report to Congress would have to be submitted at the conclusion of the experimental program and the public must be afforded an opportunity to comment on the results. LPFM appears headed to the "back burner."

The legislation, passed 274-110, basically shuts down -- at least for some time -- a January FCC proposal that would have made room for hundreds of new low-power FM stations offering local news, sports and music to small communities. Similar legislation is expected in the Senate. The bill also prohibits anyone from obtaining a low-power FM license if the applicant has previously engaged in unlicensed "pirate" operation.

The White House said the administration strongly opposes the bill. It expressed confidence the FCC could resolve interference problems and said the House should not block "...efforts to create a new class of microradio licenses that allow nonprofit groups like schools and churches to reach their local communities over the airwaves."

FCC Chairman Bill Kennard, in a statement, said the House vote could eliminate more than 80 percent of potential low power FM stations in hundreds of communities. He said the practical effect was "...to protect incumbent broadcasters from competition" and that "Special interests [have] triumphed over community interests..." The National Association of Broadcasters has fiercely opposed the Low Power FM, as has National Public Radio.

"The FCC has moved without any consideration of fact and without any careful scientific work," said Rep. John Dingell, top Democrat on the Commerce Committee. "They have no understanding of whether or not or how much interference will be caused by the order they have brought forward." The low power radio bill number is H.R. 3439.

*[Reported by the Associated Press and others.]*

## HAM RADIO BULLETIN MAKING THE ROUNDS IS A HOAX!

The following news story being forwarded around the amateur community is undoubtedly some misguided individual's attempt at satire. Supposedly it is from UPI.

Date Sat, 29 Apr 2000 084641 -0400  
United Press International  
Washington, DC. 4.25

(UPI) The Federal Communications Commission announced today additional plans to restructure the Amateur Radio Service. During a meeting of the White House Office of Telecommunications Policy, representatives of the Private Radio Bureau announced additional sweeping changes being considered for the Amateur Radio Service as well as several other radio services including Citizens Band. Insiders have stated that these changes may be the anticipated follow-up to the restructuring and administrative review announced on December 30.

One proposal being considered indicates that the Amateur Radio Service may henceforth be known as the Citizens Radio Service. Responsibility for regulating the operations of both radio services would continue to rest with the Private Radio Bureau. While the newly revised Amateur Radio license structure and testing requirements would remain intact, the names of the licenses would change. Henceforth, Amateur Radio Licenses and CB Licenses may be classified as follows:

Family Radio Service	will be referred to as "Class B CB"
27 MHz Citizens Band	becomes "Class C CB."
No Code Technician	becomes "Class D CB."
Technician Plus	becomes "Class E CB."
General Class	becomes "Class F CB."
Extra Class	becomes "Class G CB."

Additional plans call for the elimination of those portions of the Amateur Radio spectrum allocated to Morse code. "Morse is obsolete and of little value" stated an FCC attorney. He further stated that "the time has come for older radio amateurs to admit that the Internet renders all other modes of communications obsolete, particularly morse code."

Representatives of Kenwood Corporation, one of the largest manufacturers of Amateur/CB equipment praised the Commission's plans. Mr. Dan DeForest, Vice President of Marketing for Kenwood announced plans to "mass market citizens band at truck stops and retail outlets throughout North America" if the Commission follows through. He further stated that "this additional administrative action will surely appeal to the youth of America seeking an alternative to the Internet. We can't wait until Amateur Radio is a computerized hobby combined with the colorful 'chit-chat' of CB."

Representatives of the ARRL, the national organization for Amateur Radio/Citizens Band, were unavailable for comment as were representatives of Microsoft.



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## EUROPE MOVING TO 5 WPM MORSE CODE PROFICIENCY

The next big step towards worldwide adoption of 5 words-per-minute (wpm) as the amateur license Morse code test speed for full HF band access is occurring in the European Community.

In a feature article "Global trend to lower code speed" in the May issue of the Wireless Institute of Australia (WIA) journal, *Amateur Radio* magazine, Jim Linton VK3PC says that in late June this year radio societies in Europe will vote on adopting 5 wpm as the standard for full HF band access amateur licenses.

"The forum will be the EUROCOM working group meeting in Friedrichshafen, Germany on the 23rd of June," says Jim VK3PC, the WIA Victoria President and also author of "Morse code watch" at: <<http://www.tbsa.com.au/~wiavic>>.

He says, "The *Deutscher Amateur-Radio Club* (DARC) is taking a lead position on the code issue and the EUROCOM meeting agenda includes a proposal by DARC for a modification of CEPT TR 61-02, to lower the Morse code examination speed from 12 wpm to 5 wpm."

[Editor's note: This from our German correspondent - While the DARC will support reduction of the CEPT code speed from 12 to 5 wpm now, they will not support totally abolishing the code requirement when the 2002-3 WRC next considers the international Amateur Radio requirements embodied in S25.5. Their belief is that a 5 wpm code requirement abandons the need to further reduce manual telegraphy requirements.]

EUROCOM has a membership of those countries (radio societies) within the European Community, and it has influence over the widely-spread *European Conference of Postal and Telecommunications Administrations* (CEPT) licensing system.

*Vereniging voor Experimenteel Radio Onderzoek in Nederland* (VERNON), the IARU member society for Holland, at its board meeting on 16 April, voted to support the DARC motion at EURCOM. Other European radio societies are expected to make or announce their decisions soon.

Jim Linton VK3PC says, "Several European radio societies, including Germany, have been reluctant to seek unilateral decisions of 5 wpm in their countries, and depart from the unified CEPT approach.

"Clearly a modification to the CEPT system to implement 5 wpm, as proposed by DARC, if approved, will result in a virtual worldwide adoption of the lower speed."

The CEPT system also applies for visitor licensing to various non-European nations including Canada, Israel, New Zealand, Peru, South Africa and the United States.

The WIA *Amateur Radio* magazine article also reports on the anticipated change in Australia that will only require the passing of 5 wpm Morse code telegraphy test for full HF band access is part of an expanding global

trend. The *Australian Communications Authority* (ACA) after advising the WIA of its "in principle" agreement that the 5 wpm standard should be adopted, is now re-writing a *License Conditions Determination* document to make it law.

The *New Zealand Association of Radio Transmitters* (NZART) has received a similar "in principle" agreement from its radio administration, and while the switch to 5 wpm should occur in Australia before August, a definite timing for New Zealand has not been announced.

Nations that already have 5 wpm for full HF band access include Britain, Sweden, the United States, Gibraltar, and South Africa.

The Papua New Guinea Amateur Radio Society is also considering the issue, and other countries - Canada, Finland, India, Israel, Norway, Pakistan, are in various stages of policy making or discussion with their radio administrations.

The issue is also to be discussed at the International Amateur Radio Union Region 3 conference, in Darwin [Australia] in August, to be hosted by the WIA, and attended by 100 delegates from countries in the Asia and Pacific regions.

Jim Linton VK3PC concludes "We are experiencing the unfolding of an historic event for the Amateur Service, as its original licensing requirement established early last century when Morse telegraphy was the only mode of transmission, now being overturned."

For further information - "Morse code watch" at [www.tbsa.com.au/~wiavic](http://www.tbsa.com.au/~wiavic) which is being regularly updated. [This Bulletin received from WIA Victoria, Australia.]

## WIA ADOPTS NEW "NO CODE" POLICY

The *Wireless Institute of Australia* at its 64th annual Federal Convention in Melbourne April 29-30 has adopted a new policy that it support an end to mandatory Morse code amateur license testing.

In February this year the WIA adopted an "interim" policy to seek 5wpm for full HF band access.

The Australian Communications Authority in response to a WIA submission has since accepted "in principle" that 5 wpm be introduced, most likely in a few months.

In the latest development, the WIA Federal Council in considering the matter further, resolved to support the removal of Morse code testing from the ITU Radio Regulation S25.5.

The WIA will take its new policy to the IARU Region III conference in Darwin in August, when the issue of mandatory Morse code amateur license tests will be reviewed.

The earliest opportunity to make a change to ITU RR S25.5 will be the World Radio Conference 2003. [Packet bulletin originated by VK3ZWI; copied in New Zealand]



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## DEPT. OF JUSTICE CALLS FOR BREAKUP OF MICROSOFT

On Friday April 28th, the Justice Dept. and 17 states plus the District of Columbia put forth a plan to break up Microsoft Corp. into two businesses: the equivalent of a corporate "death penalty." The software giant would be split into two competing companies: a Windows operating-system company (dubbed Ops. Co.) and a Microsoft Office applications software company (Apps. Co.) Two of the states in the lawsuit - Illinois and Ohio - support the government plan but object to an immediate breakup of the software giant.

The government's plan was filed with U.S. District Judge Thomas Penfield Jackson who must approve it. It was he, who on April 3<sup>rd</sup>, ruled that Microsoft violated Sec. 2 of the Sherman Act by "...engaging in a series of exclusionary, anti-competitive, and predatory acts to maintain its monopoly power." In short, Microsoft illegally used its operating system monopoly to gain ground in other software markets, to crush competition and stifle innovation ...hurting consumers in the process.

Microsoft's new "Ops. Co." would have to disclose key Windows programming codes to software companies that write applications linked to the operating system.

The decree would not limit Microsoft's ability to add new features to its products or otherwise to innovate. It would be the most significant breakup of a major corporation since 1984, when the AT&T telephone monopoly was broken into seven "Baby Bell" regional companies.

The government was particularly distressed about the browser war between Internet Explorer and Netscape Navigator. The DOJ said Microsoft illegally bound its Web browser to Windows and then offered it as a free operating system upgrade. That made it impossible for the Netscape (which more or less "invented" the browser) to sell its Navigator browser at any price.

The government's recommendation would not dislodge the current browser from the operating system. But the new Ops. Co. would be prohibited from developing any new versions. Ownership of all Internet products including updated versions of the Internet Explorer web browser and the various web properties such as "Hot-mail", WebTV and the Microsoft Network would go to the applications side. The companies would be prevented from rejoining for 10 years.

Microsoft would be required to license Windows to the 20 largest computer makers at the same price who could change its appearance. Most computer makers feel obligated to pre-load only Microsoft's software bundles, because of the company's dominant position. Microsoft would even have to archive e-mail messages sent and received by the company for four years.

Attorney General Janet Reno said "Our proposal will stimulate competition, promote innovation and give consumers new and better choices in the marketplace."

Microsoft did not see it that way. "Rather than be reasonable and try to settle the case, the government is asking for extreme remedies that would hurt consumers and reduce innovation," the software giant said.

If the proposal is accepted, Microsoft officers and directors, including billionaire co-founder Bill Gates would be prevented from owning stock in more than one of the new companies. Vowing to fight the government's plan to break up the company, Gates said that if adopted, the proposal "...would make it impossible for Microsoft to develop the next generation of great software."

He called the Justice Department's breakup recommendation "very disturbing, not just for Microsoft but for consumers and the entire high-technology economy." He said the proposal was "anti-consumer" and "punitive beyond reason" adding "Microsoft has worked hard for years to develop Windows and Office, and these products have provided great benefits to millions of consumers." Gates predicted his company would prevail on appeal ...a process that could take many years if it goes all the way to the U.S. Supreme Court. "We do not believe courts will uphold these radical regulatory remedies..." he said.

Microsoft has already begun running a media campaign aimed at building customer sympathy. The ads contain a letter from Bill Gates and Microsoft president Steve Ballmer contending "The dismantling of Microsoft would send a signal that companies in America that are 'too' successful will be punished harshly - a signal that will be welcomed by foreign competitors seeking to overtake America's global leadership in technology."

The ruling comes at a time when Microsoft is facing increased competition from the Linux operating system which was developed by an army of volunteer computer enthusiasts over the Web. It has become a cheap and effective alternative to Windows for large corporate computer users. Linux, a reliable operating system popular with the high-tech crowd, is still hard to use by the average consumer. It may now be worth while to put in a consumer-friendly user. Linux currently has an estimated 4 percent share of the desktop operating systems market.

Microsoft spends about \$3 billion a year on "Next Generation Windows Services." A breakup would threaten their progress.

Not everyone is in favor of the breakup. Some analysts believe that more competition in either the operating systems business or software applications could mean more choices. And with it could come a variety of systems and standards -- many of which might not be compatible with one another and create a lot of confusion in the marketplace. House Majority Leader Dick Armey (R-Texas) condemned the plan saying "Punishing success only stifles innovation, guaranteeing fewer products and smaller productivity gains for American consumers and workers." Microsoft has until May 10 to file an answer to the government's recommendation.